CASCO BAY ENERGY COMPANY, L.L.C.		**DEPARTMENT**
PENOBSCOT COUNTY	**)**	**FINDINGS OF FACT AND ORDER**
VEAZIE, MAINE	**)**	**AIR EMISSION LICENSE**
A-728-71-A-N	**)**	

After review of the air emission license application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

1. Casco Bay Energy Company, L.L.C. submitted an application for a new major source on February 17, 1998. The new source is referred to as the Maine Independence Station.

2. The Maine Independence Station facility will be a nominally-rated 520 megawatt (MW) electric generating facility powered by natural gas in combined cycle turbines. The facility configuration consists of two natural gas-fired combustion turbine generators operating in combined cycle mode with two heat recovery steam generators [HRSGs], a common steam turbine generator, and a cooling tower.

3. The Maine Independence Station facility will be located on the site now occupied by Bangor Hydro-Electric Company's E.M. Graham Station power plant in Veazie. The Maine Independence Station facility will supply electric power to Maine and other New England states through an interconnection with Bangor Hydro's existing on-site substation.

B. Emission Equipment to be Licensed

Fuel Burning Equipment

Equipment	Licensed Capacity (MMBtu/hr)	Fuel Type, %Sulfur	Nominal Design Firing Rate	Stack # and Stack height
Turbine #1	1937	Natural Gas	90,005 lb/hr*	1 (155 ft)
Turbine #2	1937	Natural Gas	90,005 lb/hr*	2 (155 ft)
Fire Pump	3.4	diesel, 0.05%	25 gal/hr	3
Standby Generator	3.8	diesel, 0.05%	28 gal/hr	4

*Assuming a LHV (lower heating value) of 950 Btu/ scf

Process Equipment

Equipment
Cooling Tower

C. Application Classification

A new source is considered major based on whether or not its maximum licensed allowed emissions exceed the "Significant Emission Levels" as given in Maine's Air Regulations. The future maximum licensed allowed emissions are as follows:

Pollutant	Future License	Sig.Level
	(TPY)	(TPY)
PM	99.9	100
PM_{10}	99.9	100
SO_2	91	100
NOx	275	100
CO	546	100
VOC	39.9	50

Therefore, the new source is major for NOx and CO, all other criteria pollutants including PM, PM_{10}, SO_2, and VOC are below significant emission levels. All criteria pollutant emissions associated with this new source are subject to Best Available Control Technology (BACT) requirements.

Penobscot County has received a NO_x waiver under the Clean Air Act Section 182(f) from the requirements to obtain NO_x emission offsets or apply Lowest Achievable Emission Rates (LAER) for a new major source of NO_x emissions.

II. BEST PRACTICAL TREATMENT

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent best practical treatment (BPT), as defined in Chapter 100 of the Air Regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas. Descriptions of the applicable requirements are provided below under the appropriate headings.

The Maine Independence Station facility is an electric generation facility, which consists of the following major mechanical plant components:

- Two 170 MW F class, advanced combustion turbine generators with dry low NOx burners using natural gas as fuel.

- Two unfired heat recovery steam generators [HRSGs];

- Two selective catalytic reduction (SCR) systems;

- One condensing steam turbine/generator (steam turbine);

- One 300 kilowatt (kW) standby generator and one 430 brake horsepower (bhp) diesel fire pump, both of which will be used less than 500 hours per year each; and

- Auxiliary systems to the main equipment including a process water system, a water cooled condenser and closed-cycle, mechanical draft cooling tower, a generator step-up transformer, and approximately 10 storage tanks containing fluids used by the major facility components.

Emissions are formed by the combustion of natural gas in the turbine generators, the combustion of diesel fuel in the standby generator and fire pump, and the drift of water vapor laden with particulate matter from the cooling tower, and are therefore addressed in the BACT analysis.

B. New Emission Units

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT) as defined in Chapter 100 of the Air Regulations. BACT is a top down approach to selecting air emission controls considering economic, environmental and energy impacts.

Project Description

The facility will use combined cycle power generation technology. Natural gas will be combusted in two gas turbines which will generate the majority of the electric output. Exhaust heat from the gas turbines will be captured by producing steam in two HRSGs, and converting it to electric output through the use of a steam turbine/ generator.

The facility will use dry low NOx burners to limit NOx formation and selective catalytic reduction [SCR] to control NOx. The dry low NOx combustors may be operated in the pre-mix (low NOx mode) down to 60 percent of rated load. Combustion gases from each gas turbine will be directed to an HRSG. Steam will be produced in each HRSG at three pressure levels. The steam from both HRSGs will be directed to a single steam turbine/ generator. Facility emissions will exit to the atmosphere through two 155 foot exhaust stacks.

The steam turbine under baseload design conditions will generate approximately 180 megawatts (MW) of electric power. The gas turbines have a total 340 MW output, thus giving the Maine Independence Station facility a total nominal output of 520 MW at design conditions (45°F, 60% relative humidity, 1 atmosphere).

The facility will be operated as a baseload plant. The normal operating range of each gas turbine is from 60 to 100 percent baseload. The facility is expected to experience approximately 40 shutdowns and start-ups per turbine per year.

BACT for the Gas Turbine Generators

The gas fired turbines are subject to New Source Performance Standards (NSPS), 40 CFR Part 60, Subpart GG - Standards of Performance for Stationary Gas Turbines, for which construction is commenced after October 3, 1977.

40 CFR Part 60, Subpart GG establishes the following emission limits:
Pursuant to 40 CFR Part 60.333 SO_2 is limited to (a) 0.015% by volume @ 15% O_2 on a dry basis or (b) the fuel sulfur content shall not exceed 0.8% by weight.

Pursuant to 40 CFR Part 60.332(a)(1) NO_x is limited based on the following equation:

NO_x - $STD = 0.0075*(14.4/Y) + F$,

where STD is the allowable NO_x emissions (percent by volume at 15% O_2 and on a dry basis), Y is a function of the manufacturer's rated load (kilojoules per watt hour), and F is a function of the fuel-bound nitrogen

The NSPS establishes a nominal NOx emission limit for the Maine Independence Station facility of 75 ppmvd at 100% load. While the NSPS does apply, the proposed BACT is substantially more stringent; compliance with BACT will insure compliance with the NSPS.

The Maine Independence Station facility has proposed BACT for the Electric Generating Systems to be the following:

Turbine NO_x	-	Dry low NO_x combustor & Selective Catalytic Reduction
Turbine SO_2	-	Combustion of natural gas
Turbine CO	-	Good Combustion Practices
Turbine PM/PM_{10}	-	Good Combustion Practices, combustion of natural gas
Turbine VOC	-	Good Combustion Practices
Cooling tower PM_{10}	-	Drift Eliminators

A summary of the BACT analysis for each pollutant is discussed below:

Nitrogen Oxides

NOx emitted from combustion sources results from oxidation of both fuel bound nitrogen and atmospheric nitrogen (thermal NOx). Natural gas has very low fuel bound nitrogen so reducing NOx emissions must focus on reducing the thermal NOx. The Maine Independence Station facility proposes the use of dry low NOx combustors which provide a staging of combustion, resulting in lean fuel-air mixtures throughout the combustion zone thereby eliminating high flame temperatures and thermal NOx formation. Dry low NOx combustors represent the state-of-the-art combustion turbine technology without supplemental control.

The Maine Independence Station facility evaluated several NOx control strategies for their technical and economic feasibility and have concluded that SCR technology represents BACT. SCR uses an ammonia (NH_3) injection system and

a catalytic reactor to reduce NOx. An injection grid disperses NH_3 into the flue gas upstream of the catalyst and the NH_3 and NOx are reduced to nitrogen gas (N_2) and water vapor (H_2O) in the presence of the catalyst reactor. The lowest reported emission limitation reported in the RACT/BACT/LAER Clearinghouse using SCR technology is 3.5 ppmvd. SCR in conjunction with dry low-NOx combustors is selected as the BACT technology with a NOx emission rate of 3.5 ppmvd (24-hr average).

Ammonia slip of up to 20 ppmvd on a 24-hr average and 10 ppmvd of a 30-day rolling average will result from the use of SCR. Ammonia slip is minimized by optimizing the ratio of ammonia to NOx to near the stoichiometric requirement.

Particulate Matter and PM10

Units firing fuels with low ash content and high combustion efficiency exhibit correspondingly low particulate matter emissions. The most stringent particulate control method demonstrated for gas turbines is the use of low ash fuel such as natural gas. No add on control technologies are listed in the RACT/BACT/LAER Clearinghouse listings for combustion turbines. Proper combustion control and the firing of natural gas with negligible or zero ash content is the predominant control method in use. Add on control, such as ESPs or baghouses, have never been applied to commercial gas fired turbines. The use of ESPs or baghouse filters is considered technically unfeasible, and does not represent an available control technology.

Therefore, the use of natural gas and good combustion control is selected as BACT with a particulate matter emission rate of 10 lb/hr. Total PM emissions will be less than 47.4 tons/yr for each gas turbine.

Sulfur Dioxide (SO2)

SO_2 is formed from the oxidation of sulfur in fuel. The most stringent method of control for SO_2 that has been demonstrated for gas turbines is firing pipeline quality natural gas. The EPA established NSPS for gas turbines which commenced construction, modification, or reconstruction after October 3, 1977. The NSPS limit for sulfur in fuel is 0.8% by weight.

Natural gas from pipelines contains an average sulfur content of about 2 grains per hundred cubic foot. Total estimated SO_2 emissions from each gas turbine is 45 tons/yr based on the use of pipeline quality natural gas.

Therefore, firing exclusively pipeline quality natural gas is BACT for SO_2.

Carbon Monoxide

Carbon Monoxide (CO) results from the incomplete combustion of gas in the turbine. As with other types of combustors, combustion efficiency is optimized at the design load case.

Dry low NOx combustors have been demonstrated to be able to achieve very low CO emissions over a range of operating loads. Most combined cycle projects have satisfied the BACT requirement by demonstrating good combustion control.

The Maine Independence Station facility also evaluated the use of a combustion catalyst to control CO. However, CO catalyst oxidation was rejected since it would result in collateral increases in PM_{10} (and $PM_{2.5}$) emissions and is not cost effective for this project.

Therefore, BACT is good combustion practices achieving CO emissions of 20 ppmvd, the use of dry low NOx combustors, and instrumentation and controls. The resulting emission level results in modeled impacts which are less than one percent of the National Ambient Air Quality Standard.

Volatile Organic Compounds (VOC)

VOCs are emitted from gas-fired turbines as a result of incomplete combustion of fuel. Control of VOCs is accomplished by providing adequate fuel residence time and high temperature in the combustion zone to ensure complete combustion. According to the RACT/BACT/LAER Clearinghouse oxidation catalyst systems have been concluded to represent BACT for VOC control for two units. The same technical factors which apply to the use of catalyst technology for control of CO emissions apply to the use of this technology for collateral control of VOC. However, the Maine Independence Station facility has rejected the oxidation catalyst system as BACT since it was not cost effective as a control option for CO emissions for this project.

The next level of control is combustion controls where VOC emissions are minimized by optimizing fuel mixing, excess air, and combustion temperature to assure complete combustion of the fuel. Therefore, BACT is good combustion practices.

BACT for the Cooling Tower

Cooling towers are designed to efficiently evaporate water. As water evaporates, it absorbs heat, causing the remaining water to become colder. To improve the evaporation rate, cooling towers induce a flow of fresh air across the wetted surface area, called fill. The induced air flow entrains some of the fine water droplets which carry out of the tower. The droplets are referred to as drift. The fine droplets subsequently evaporate in the ambient air, liberating the total dissolved solids formerly in solution as emissions of particulate matter (PM_{10}). Particulate matter emissions will be limited by the application of drift eliminators which consist of layers of plastic chevrons located within the tower to knock out and coalesce fine water droplets before they are emitted to the atmosphere. Therefore, BACT shall be the use of drift eliminators. This level of control results in total annual emission of PM_{10} of less than 4.9 TPY.

BACT for the Diesel Fire Pump and the Standby Generator

The fire pump and standby generator will be used for emergencies and will be tested regularly. The standby generator will provide power to maintain control, heat tracing, and other required services to allow the plant to remain ready to start, but is not intended to provide enough power for a black start.

Based on the relatively small size of the diesel generators, and the quantity of pollutants that could potentially be emitted, it is determined by the Bureau of Air Quality that any add on pollution control device would be economically unjustified. Therefore, BACT for the 430 horsepower standby fire pump shall be limiting operation to less than 500 hours per year and limiting fuel use to diesel fuel with a sulfur content not to exceed 0.05% by weight. BACT for the 300 kilowatt standby generator shall be limited operation to less than 500 hours per year and limiting fuel use to diesel fuel with a sulfur content not to exceed 0.05% by weight.

III. EMISSION STANDARDS

The following is a brief description of the origin of the emission limits to which the Maine Independence Station facility is subject. In the situations where the Maine Independence Station facility is subject to both a regulatory limit and a BACT or NSPS limit, the most stringent limit is listed within the order of this license and demonstration with that limit is considered to be a demonstration of the other limits.

A. Natural gas-fired turbine
   1. Visible Emissions
      a. Chapter 101 of the MEDEP Regulations

Visible emissions from each turbine shall not exceed 40 percent opacity for more than 15 minutes in any continuous 3-hour period, except during startup and shutdown.

b. BACT
Visible emissions from each turbine shall each not exceed 20% opacity, measured as 6 minute averages, except for one 6 minute average period per hour of not more than 27% opacity, except during startup and shutdown.

2. Particulate Matter Emissions
   a. Chapter 103 of the MEDEP Regulations
   Each turbine shall each not exceed 0.06 lbs. particulate matter per million BTU.
   b. BACT
   see III.B(1). below

3. Low Sulfur Fuel
   a. BACT
   The Maine Independence Station facility shall combust only pipeline quality natural gas in the turbine generator.

4. Other Emission Limits:
   a. SO_2, NSPS 40 CFR Part 60.333(a) or (b)
   The Maine Independence Station facility shall (a) not exceed an SO_2 emission of 0.015% by volume @ 15% O_2 on a dry basis, or (b) shall not burn liquid fossil fuel containing over 0.8 percent sulfur by weight as fired in the turbine.
   b. NO_x, NSPS 40 CFR Part 60.332(a)(1)
   The Maine Independence Station facility shall not exceed a NO_x emission from the turbine based on the following equation:

$$NO_x\text{-}\quad STD = 0.0075 * (14.4/Y) + F,$$

   where STD is the allowable NO_x emissions (percent by volume at 15% O_2 and on a dry basis), Y is a function of the manufacturer's rated load (kilojoules per watt hour), and F is a function of the fuel-bound nitrogen

c. BACT
see III.B. below

B. Gas Turbines #1 and #2, BACT

1. Emissions from each gas turbine shall not exceed the following limits, except during startup/ shutdown:

Pollutant	Load	ppmvd	Ave Time	lb/hr	Control Technology
PM	All	--	--	10	Natural gas only
PM_{10}	All	--	--	10	Natural gas only
SO_2	All	--	--	11	Natural gas only (2gr/100 scf)
NOx	All	3.5 @15% O_2	24 hr block ave	25	Dry low NOx Technology & SCR
CO	All	20 @15% O_2	24 hr block ave	52	Good Combustion & Dry low NOx technology
VOC	All	--	--	4.5	Good Combustion control
Ammonia	All	20 @15% O_2 10 @15% O_2	24 hr block ave 30-day rolling ave	51 25.5	Good Engineering Practices

- Compliance with the PM and PM_{10} lb/hour emission limits shall be determined through stack testing using 40 CFR 60, Method 5.
- Compliance with the SO_2 lb/hour emission limit shall be demonstrated by natural gas firing rate into each turbine and by fuel sample analysis of the natural gas sulfur content as required by NSPS Subpart GG.
- Compliance with the NOx, CO, and ammonia ppmvd emission limits shall be demonstrated by the use of continuous emission monitors (CEMS).
- The CO, NOx, VOC, and ammonia lb/hour emission limits shall be demonstrated through stack testing, when requested by the Bureau of Air Quality.

C. Diesel Fire Pump and the Standby Generator

1. The fire pump and standby generator shall be limited to firing diesel fuel oil with a sulfur content not to exceed 0.05% by weight.

2. The emission limits are based on BACT determined emission limits and the EPA's AP-42, "Compilation of Air Pollutant Emission Factors". Emissions from the fire pump and standby generator shall not exceed the following:

Power Source	**Fire Pump**	**Fire Pump**	**Standby Generator**	**Standby Generator**
Pollutant	lb/MMBtu	lb/hr	lb/MMBtu	lb/hr
PM	0.12	0.42	0.12	0.47
PM_{10}	0.12	0.42	0.12	0.47
SO_2	-	0.2	-	0.2
NO_X	-	15	-	17
CO	-	3.3	-	3.6
VOC	-	1.2	-	1.3

3. The visible emissions from each standby generation unit shall not exceed 30% opacity except for 15 minutes in any continuous 3-hour period.

D. Facility Emissions

Total Allowable Annual Emissions for the Facility
(used to calculate the annual license fee)

Pollutant	**TPY**
PM	99.9
PM_{10}	99.9
SO_2	91
NO_X	275
CO	546
VOC	39.9

IV. AMBIENT AIR QUALITY ANALYSIS

A. Overview

A combination of screening and refined modeling was performed to show that the proposed Maine Independence Station (MIS) emissions, in conjunction with other sources, would not cause or contribute to violations of Maine Ambient Air Quality Standards (MAAQS) for SO_2, PM_{10}, NO_2, and CO, or to Class I or Class II increments for SO_2, PM_{10} and NO_2.

Since MIS is entirely increment consuming and the nearest Class I area is approximately 53 kilometers away, Class I and II SO_2, PM_{10} and NO_2 increment analyses were performed. In addition, analyses were performed to show that MIS's emissions will not adversely impact other Class I and II air quality related values (AQRV's).

B. Model Inputs

The SCREEN3 screening and ISCST3 (simple terrain mode) refined models were used to address standards and increments in all areas. In addition, the SCREEN3 model was used to evaluate impacts in intermediate and complex terrain, i.e., areas where terrain elevations exceed the proposed stack-top elevations.

All modeling was performed in accordance with all applicable requirements of the Maine Department of Environmental Protection, Bureau of Air Quality (MEDEP-BAQ) and the United States Environmental Protection Agency (USEPA).

A valid 5-year hourly meteorological off-site database was used in the refined modeling. The primary wind data was collected at a height of 13 meters at the Bangor DEP meteorological site during the 5-year period 1986-1990. All five years of meteorological data had individual and joint recovery rates well above the required 90% level. Bangor FAA wind data was used to fill in missing Bangor DEP wind data. Bangor FAA surface temperature data was used. Hourly cloud cover, ceiling height and surface wind speed data, also from the Bangor FAA, were used to calculate stability. Hourly mixing heights were derived from Caribou NWS surface and upper air data. Missing data were filled using procedures outlined in EPA-450/4-87-013 "On-site Meteorological Program Guidance for Regulatory Modeling Applications, June 1987 (as revised February 1993)"

Stack parameters for MIS are listed in Table IV-1. The proposed stacks at MIS are less than their respective formula GEP heights, therefore MIS's proposed stacks were modeled with the appropriate downwash algorithms as required. Since MIS's

proposed stacks are greater than H + 0.5L (where H is the height of the controlling structure and L is the lesser of the height or maximum projected width of that structure), no cavity analysis was performed.

Table IV-1 MIS Proposed Stack Parameters

Facility/Stack	Stack Base Elev. (m)	Stack Height (m)	GEP Stack Height (m)	Stack Dia. (m)	UTM E (km)	UTM N (km)
MIS North Stack 1	18.90	47.244	68.58	5.49	522.880	4963.176
MIS South Stack 2	18.90	47.244	68.58	5.49	522.884	4963.145

MIS's emission parameters for MAAQS and increment modeling are listed in Table IV-2. The emission parameters for MIS are based on the maximum license allowed (base), typical (75%), and minimum (50%) load operating configurations at ambient temperatures of 15°F, 45°F and 90°F. For the purpose of determining NO_2 and PM_{10} impacts, all NO_x and PM emissions were conservatively assumed to convert to NO_2 and PM_{10}, respectively.

Table IV-2 MIS's Proposed Emission Parameters

Operating Scenario/ Facility/Stack	SO_2 (g/s)	PM_{10} (g/s)	NO_2 (g/s)	CO (g/s)	NH_3 (g/s)	Temp (°K)	Stack Vel. (m/s)
Base Load 15°F							
MIS North Stack 1	**1.386**	**1.260**	**4.368**	**6.552**	**6.426**	**359**	**22.58**
MIS South Stack 2	**1.386**	**1.260**	**4.368**	**6.552**	**6.426**	**359**	**22.58**
Base Load 45°F							
MIS North Stack 1	1.386	1.260	4.200	6.174	6.010	361	21.36
MIS South Stack 2	1.386	1.260	4.200	6.174	6.010	361	21.36
Base Load 90°F							
MIS North Stack 1	1.247	1.260	3.780	5.544	5.588	363	19.35
MIS South Stack 2	1.247	1.260	3.780	5.544	5.588	363	19.35
75% 15°F							
MIS North Stack 1	1.109	1.260	3.486	5.166	5.029	349	17.74
MIS South Stack 2	1.109	1.260	3.486	5.166	5.029	349	17.74
75% 45°F							
MIS North Stack 1	**1.109**	**1.260**	**3.360**	**5.04**	**4.889**	**353**	**17.18**
MIS South Stack 2	**1.109**	**1.260**	**3.360**	**5.04**	**4.889**	**353**	**17.18**
75% 90°F							
MIS North Stack 1	0.970	1.260	3.066	4.536	4.610	357	15.92
MIS South Stack 2	0.970	1.260	3.066	4.536	4.610	357	15.92
50% 15°F							
MIS North Stack 1	0.832	1.260	2.782	4.284	4.191	343	14.48
MIS South Stack 2	0.832	1.260	2.782	4.284	4.191	343	14.48
50% 45°F							
MIS North Stack 1	0.832	1.260	2.688	4.158	4.051	347	14.13
MIS South Stack 2	0.832	1.260	2.688	4.158	4.051	347	14.13
50% 90°F							
MIS North Stack 1	**0.832**	**1.260**	**2.940**	**3.906**	**3.911**	**353**	**13.37**
MIS South Stack 2	**0.832**	**1.260**	**2.940**	**3.906**	**3.911**	**353**	**13.37**

C. Applicant's modeled impacts.

Simple and intermediate/complex terrain SCREEN3 modeling was performed for the 9 MIS operating scenarios listed in Table IV-2. Further ISCST3 (simple terrain mode) refined modeling was performed for the MIS operating scenarios (Base 15°F, 75% 45°F and 50% 90°F loads highlighted in **bold print** in Table IV-2) that resulted in the highest SCREEN3 impacts.

The model results for MIS alone in simple and intermediate/complex terrain are shown in Tables IV-3 and IV-4, respectively. All SO_2, PM_{10}, NO_2 and CO averaging period impacts were insignificant in the ISCST3 (simple terrain mode) and SCREEN3 intermediate/complex terrain modeling analyses. Thus, combined source MAAQS and increment modeling analyses are not required for these pollutant/terrain combinations in Class II areas. All SO_2, PM_{10}, NO_2 and CO averaging period impacts were below the de minimus levels. Therefore, pre-construction monitoring is not required.

Table IV-3. Maximum ISCST3 (Simple Terrain Mode) Impacts from MIS Alone

Pollutant	Averaging Period	Max Impact (µg/m³)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	de minimus Level (µg/m³)	Class II Significance Level (µg/m³)
SO_2	3-hour	5.85	522.8	4963.4	24.38	**n/a**	**25**
SO_2	24-hour	2.04	522.8	4963.4	24.38	**13**	**5**
SO_2	Annual	0.13	522.8	4963.4	24.38	**n/a**	**1**
PM_{10}	24-hour	3.08	522.8	4963.4	24.38	**10**	**5**
PM_{10}	Annual	0.19	522.8	4963.4	24.38	**n/a**	**1**
NO_2	Annual	0.33*	522.8	4963.4	24.38	**14**	**1**
CO	1-hour	134.0**	**	**	27.43	**n/a**	**2,000**
CO	8-hour	93.8**	**	**	27.43	**575**	**500**
NH_3	24-hour	9.57	522.8	4963.4	24.38	**n/a**	**n/a**
NH_3	Annual	0.59	522.8	4963.4	24.38	**n/a**	**n/a**

Notes:

* Ambient Ratio Method using a 0.75 NO_x to NO_2 conversion factor allowed by 40 CFR Part 51 Appendix W.

** Max SCREEN3 Screening impacts located at a receptor 100 m from the proposed MIS stacks.

n/a not applicable

Table IV-4. Maximum SCREEN-3 Intermediate/Complex Terrain Impacts from MIS Alone

Pollutant	Averaging Period	Max Impact ($\mu g/m^3$)	Receptor Location			de minimus Level ($\mu g/m^3$)	Class II Significance Level ($\mu g/m^3$)
			Distance (km)	Direction	Elevation (m)		
SO_2	3-hour	4.18	3.77	ENE	98.5	**n/a**	**25**
SO_2	24-hour	1.65	1.91	NNW	47.5	**13**	**5**
SO_2	Annual	0.37	3.77	ENE	98.5	**n/a**	**1**
PM_{10}	24-hour	2.17	1.91	NNW	47.5	**10**	**5**
PM_{10}	Annual	0.56	3.77	ENE	98.5	**n/a**	**1**
NO_2	Annual	0.92*	3.77	ENE	98.5	**14**	**1**
CO	1-hour	23.64	3.77	ENE	98.5	**n/a**	**2,000**
CO	8-hour	16.55	3.77	ENE	98.5	**575**	**500**
NH_3	24-hour	7.48	1.91	NNW	47.5	**n/a**	**n/a**
NH_3	Annual	1.85	3.77	ENE	98.5	**n/a**	**n/a**

Notes:

* Ambient Ratio Method using a 0.75 NO_x to NO_2 conversion factor allowed by 40 CFR Part 51 Appendix W.

n/a not applicable

D. Additional Impact Analyses

Federal regulations and Chapter 115 of the DEP regulations require that any new major source provide additional analyses of impacts that would occur as a direct result of the general, commercial, residential, industrial and other growth associated with the construction and operation of that source. In addition, an analysis of impairment to visibility, soils and vegetation that would occur as a result of any new major source is required.

GENERAL GROWTH: Some increases in local emissions due to construction related activities (mobile sources, excavating, grading, welding, painting, etc.) are expected to occur for approximately 22 months. The emissions produced by these activities will be localized. Emissions of dust will be minimized by the use of "Best Management Practices" for suppression of fugitive particulate matter during construction and operation. Increases in potential emissions of NO_x due to commuting by construction workers will be temporary, spread out over a wide area and short-lived. Due to the lack of substantial general growth, no further ambient impact analysis is required.

RESIDENTIAL GROWTH: Population growth in the impact area of the proposed source can be used as a surrogate factor for the growth in emissions from

residential combustion sources. Operation of the facility is expected to require approximately 25 new full-time jobs. As a result of the minimal manpower requirements, operations and support required for the facility will, for the most part, be available from the region. It is expected that no new significant residential growth will follow from this source.

COMMERCIAL, INDUSTRIAL and OTHER GROWTH: The proposed project will be constructed for the sale of electricity only. Since the proposed project will consume very little in terms of raw materials and supplies, construction of new industries and businesses to support the facility's operation will likely not be needed, therefore, no significant commercial, industrial or other growth is expected to occur as a result of this project.

CLASS II VISIBILITY: Visible emissions from the proposed facility will be minimized by controlling emissions through the implementation of BACT.

SOILS AND VEGETATION: Impacts on sensitive vegetation and soils were evaluated using the maximum impacts from the ISCST3 and SCREEN3 modeling. The results of the soil and vegetation impacts are shown in Table IV-5. Evaluation of SO_2, NO_2 and CO impacts on sensitive vegetation and soils was performed by comparison of predicted facility impacts with screening levels presented in *A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils and Animals* (EPA, December 1980, EPA 450/2-81-078). Evaluation of NH_3 impacts on sensitive vegetation and soils was performed by comparison of predicted facility impacts with injury threshold levels presented in *Fundamentals of Air Pollution* (Second Edition, 1984 by A.C. Stern, R.W. Boubel, D.B. Turner and D.L. Fox). Any acute or chronic deleterious effects to the soils and vegetation would be expected to occur only at ambient concentration levels substantially higher than impacts predicted by dispersion modeling. Proposed emissions from MIS are not expected to impact even the more sensitive soils or vegetation near the facility. Because the soil and vegetation impacts near the facility (non-Class I) are well below sensitivity levels, impacts in Class I areas were not evaluated.

TABLE IV-5 Soil and Vegetation Impacts, MIS Alone

Pollutant	Averaging Period	Max MIS Class II Impact ($\mu g/m^3$)	Sensitivity Screening Levels ($\mu g/m^3$)
SO_2	1-hour	9.70[1]	917
	3-hour	8.55[1]	786
	Annual	0.37[2]	18
NO_2	4-hour	21.8[1]	3,760
	8-hour	15.4[1]	3,760
	1-Month	0.84[1]	564
	Annual	0.92[2]	94
CO	1-Week	134[2]	1,800,000
NH_3	4-hour	38.6[1]	14,000[3]

Notes:

1 highest ISCST3 modeled impact. Ambient Ratio Method using a 0.75 NO_x to NO_2 conversion factor allowed by 40 CFR Part 51 Appendix W.

2 highest SCREEN3 modeled impact. Ambient Ratio Method using a 0.75 NO_x to NO_2 conversion factor allowed by 40 CFR Part 51 Appendix W.

3 injury threshold (Stern et al)

E. Class I Impacts

Since the proposed emissions from MIS are entirely increment consuming and the nearest Class I area (Acadia National Park) is approximately 53 kilometers south to southeast of MIS, a Class I increment analysis was performed. MIS's maximum Class I increment impacts were assessed using ISCST3 (simple terrain mode) in simple and intermediate terrain and SCREEN3 in intermediate/complex terrain of Acadia National Park.

The maximum increment impacts for MIS alone in the Acadia National Park Class I area were predicted to be insignificant for all pollutants as shown in Tables IV-6. Because all impacts were below all Class I significance levels, no other sources were included in the analysis.

Since maximum predicted impacts in the closest Class I area (Acadia National Park) meet all Class I increment standards, the other more distant Class I areas (Presidential Range Dry River Wilderness and Great Gulf Wilderness Areas (209 km west-southwest), Moosehorn National Wildlife Refuge (123 km east-northeast) and Roosevelt Campobello International Park (145 km east) were not evaluated.

Table IV-6. Increment Consumption in the Acadia National Park Class I Area, (µg/m³)

Pollutant/ Averaging Period	ISCST3 Maximum Impact	SCREEN3 (VALLEY) Maximum Impact	Class I Significance	Class I Increment
SO_2 3-hour	0.55	0.34	1.00	25
SO_2 24-hour	0.08	0.10	0.20	5
SO_2 Annual	0.005	0.03	0.08	2
PM_{10} 24-hour	0.09	0.09	0.32	10
PM_{10} Annual	0.005	0.03	0.16	5
NO_2 Annual	0.011*	0.08*	0.10	2.5

Notes:

* Ambient Ratio Method using a 0.75 NO_x to NO_2 conversion factor allowed by 40 CFR Part 51 Appendix W.
Maximum ISCST3 Impact : (557.7 km E, 4917.55 km N, 66.14 meter elevation)
Maximum SCREEN3 (Valley) Impact : (59.501 km SE of MIS at 169.8 meter elevation)

F. Class I AQRV Analyses

CLASS I VISIBILITY: A VISCREEN Level-1 analysis was used to assess visibility impacts on Class I areas inside Acadia National Park (ANP) and Integral Vistas outside ANP. Table IV-7 summarizes the VISCREEN model input data for the Class I area's Level-1 analysis. Data include source emission strengths for the facility, distances to the Class I areas, plume-observer angle, background visual range, model default values for meteorological conditions and background air quality levels.

Table IV-7. VISCREEN Input Data

POLLUTANT INPUT DATA			
Pollutant	Maximum Operating Case Emissions (g/s)		
Particulates	2.52		
NO_x (as NO_2)	8.74		
Primary NO_2	0.00		
Soot	0.00		
Primary SO_4	0.00		
DEFAULT PARTICLE CHARACTERISTICS			
Background Ozone	0.10 ppm		
Background Visual Range	60.00 km		
Plume-Source-Observer Angle	11.25° and 22.5°		
DISTANCE INPUT DATA			
	DISTANCE TO CLASS I AREAS		
Class I Area	Source-Observer Distance (km)	Minimum Source-Class I Distance (km)	Maximum Source-Class I Distance (km)
Acadia National Park	53.2	53.2	90.92

Results of the Level-1 analyses are summarized in Table IV-8. This table presents the worst-case plume perceptibility (Delta-E) and plume contrast values obtained for each situation analyzed. Level-1 screening results indicate that MIS emissions will not cause plume visibility impacts within the ANP Class I area. Because critical visibility values could be met using this method, no Level-2 visibility analysis or regional haze analysis were performed.

Table IV-8. VISCREEN Model Results in Class I Areas

Level 1 Analysis						
			Inside Class I Area		Integral Vistas	
			Delta E	Contrast (±)	Delta E	Contrast (±)
CRITICAL VALUES			2.0	0.05	2.00	0.05
ACADIA NATIONAL PARK						
Case	Background	Sun Angle	Delta E	Contrast (±)	Delta E	Contrast (±)
Maximum	Sky	10°	0.683	0.003	0.891	0.005
Maximum	Sky	140°	0.273	-.005	0.321	-.008
Maximum	Terrain	10°	0.360	0.005	1.177	0.012
Maximum	Terrain	140°	0.071	0.003	0.365	0.012

OTHER AQRV'S: The Federal Land Manager for the Acadia National Park Class I area has identified the following AQRV's:

- vegetative species in the park that are sensitive to ambient ozone concentrations.
- sensitive watersheds where acid deposition (nitrogen deposition) is a problem.

Results in Table IV-5 show that sensitive vegetation and soils will not be adversely impacted by MIS SO_2, NO_2, NH_3 and CO emissions. Ozone is a secondary formed pollutant dependent on concentrations of NO_x and VOCs and the intensity of sunlight. Sensitivity screening levels (EPA, December 1980, EPA 450/2-81-078) for ozone are 0.20 ppmv for 1-hour, 0.10 ppmv for 3-hours and 0.06 ppmv for 8-hours. Expected periods of ozone concentrations above the sensitivity levels occur mainly with winds from the south to west. The MIS facility will be located north to northwest of Acadia National Park Class I areas, therefore MIS emissions will not contribute to ozone damage to vegetative species during peak ozone concentration periods.

The green line level for total nitrogen deposition is 5 to 8 kg/ha/yr as shown in Table 6 of *Screening Procedure to Evaluate Effects of Air Pollution on Eastern Region Wilderness Cited as Class I Air Quality Areas* (Adams et al, 1991, Gen. Tech. Rep. NE-151, Radnor, PA; US Dept of Agriculture, Forest Service, Northeastern Forest Experiments Station). Results of 5-years of ISCST3 nitrogen (NO_x) deposition show that the maximum modeled yearly dry deposition rate at Acadia National Park Class I area is 0.04 kg/ha/yr. Therefore, it is reasonably certain that MIS nitrogen emissions will not significantly contribute to adverse impacts in sensitive watersheds where acid deposition is a problem.

G. Summary

It has been demonstrated that MIS in its proposed configuration will not cause or contribute to a violation of any SO_2, PM_{10}, NO_2 or CO averaging period MAAQS. It has also been demonstrated that, MIS in its proposed configuration, will not cause or contribute to a violation of any SO_2, PM_{10}, or NO_2 averaging period Class I or Class II increment standards. In addition, MIS in its proposed configuration, will cause no impairment to AQRV's in Class I or II areas.

ORDER

Based on the above Findings and subject to conditions listed below the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-728-71-A-N subject to the following conditions:

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions.

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115.

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both.

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request.

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 MRSA §353.

(6) The license does not convey any property rights of any sort, or any exclusive privilege.

(7) The licensee shall maintain and operate all emission units and air pollution control systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions.

(8) The licensee shall maintain sufficient records, to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request.

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for the renewal of a license or amendment shall not stay any condition of the license.

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.

(11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:

A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:

1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or

2. pursuant to any other requirement of this license to perform stack testing.

B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

C. submit a written report to the Department within thirty (30) days from date of test completion.

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and

B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

(13) Notwithstanding any other provision in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement.

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation.

(15) Upon the written request of the Department, the licensee shall establish and maintain such records, make such reports, install, use, and maintain such monitoring equipment, sample such emissions (in accordance with such methods,

at such locations, at such intervals, and in such manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status.

SPECIFIC CONDITIONS

(16) The following shall apply to the conditions in this order as appropriate:

A. A 30-day rolling block average shall be calculated as the arithmetic average of not more than 30 - 24-hr block averages.

B. A 24-hour block average basis shall be calculated as the arithmetic average of not more than 24 - one hour block periods. Only one 24-hour block average shall be calculated for one day, beginning at midnight. Hours in which no operation occurs shall not be included in the 24-hr block average calculation.

(17) Electric Generating System

A. The Maine Independence Station facility electric generating system shall consist two nominal 170 MW F class, advanced combustion turbine generators with dry low NOx combustors, two unfired heat recovery steam generators [HRSGs], and one condensing steam turbine generator (steam turbine).

B. The Maine Independence Station shall fire only natural gas in the turbine generators.

C. Visible emissions from each turbine exhaust stack shall not exceed 20% opacity, measured as 6 minute block averages, except for one 6 minute block average period per hour of not more than 27% opacity. Opacity emissions shall be exempt during the first four hours following the initiation of cold startup or planned shutdown, provided that operating records are available to demonstrate that the facility was being operated to minimize emissions.

i. Compliance with the opacity limit shall be demonstrated during the initial performance test in accordance with 40 CFR 60, Method 9.

D. The Maine Independence Station facility shall operate Selective Catalytic Reduction (SCR) systems to reduce NOx emissions, except during startup and shutdown.

E. The exhaust from each gas turbine system shall be vented through a 155 foot above ground level stack.

F. Emissions from each gas turbine shall not exceed the following limits, except during startup or shutdown:

Pollutant	Load	ppmvd	Ave Time	lb/hr	Control Technology
PM	All	--	--	10	Natural gas only
PM_{10}	All	--	--	10	Natural gas only
SO_2	All	--	--	11	Natural gas only (2gr/100 scf)
NOx	All	3.5 @15% O_2	24 hr block ave	25	Dry Low NOx Technology & SCR
CO	All	20 @15% O_2	24 hr block ave	52	Good Combustion & Dry Low NOx technology
VOC	All	--	--	4.5	Good Combustion control
Ammonia	All	20 @15% O_2 10 @15% O_2	24 hr block ave 30-day rolling ave	51 25.5	Good Engineering Practices

G. Compliance with the PM and PM_{10} lb/hour emission limits shall be determined through stack testing in accordance with 40 CFR Part 60, Appendix A, Method 5.

H. Compliance with the SO_2 lb/hour emission limit shall be demonstrated by the natural gas firing rate into each turbine and by fuel sample analysis of the natural gas sulfur content as required by 40 CFR 60 Subpart GG and 40 CFR 75, Appendix D.

i. The Maine Independence Station facility shall perform fuel sulfur monitoring in accordance to the provision of 40 CFR 60.334. However, if the Maine Independence Stations facility receives approval from EPA, the Maine Independence Station facility may perform sulfur content monitoring bimonthly. If six months of data show little variability in the sulfur content, the Maine Independence Station facility may decrease the monitoring frequency to a quarterly basis. After an additional six months of data continue to show little variability, the Maine Independence Station facility may decrease the monitoring frequency to a semiannual basis. In all cases, the Maine Independence Station facility must comply with 40 CFR 60.333.

I. Compliance with the NOx, CO, and ammonia ppmvd emission limits shall be demonstrated by the use of continuous emission monitors (CEMS) meeting

the performance specifications of 40 CFR Part 60, Appendix B and F, Part 75, Appendix A and B, and MEDEP Chapter 117, as applicable. When requested by the Bureau of Air Quality, NOx, CO, and ammonia lb/hour emission limits shall be demonstrated through stack testing in accordance with 40 CFR Part 60, Appendix A (Method 20 for NOx and Method 10 and 19 for CO).

J. The VOC lb/hour emission limit shall be demonstrated through stack testing in accordance with 40 CFR Part 60, Appendix A, Method 25A.

(18) The Maine Independence Station facility shall monitor and record the following as specified, for each gas turbine system:

Parameter for each gas turbine System	**Monitor**	**Record Monitor Data**
turbine natural gas firing rate (actual cubic feet input)	continuously	continuously

The parameter monitors shall be properly maintained, calibrated, and operated at all times the source or process being monitored is operating except for outages not exceeding five percent (5%) of the source operating time on a quarterly basis which are attributable to QA/QC activities, sudden, unforeseen equipment malfunctions or failure not associated with operator error, poor maintenance or any other reasonably preventable condition.

(19) Continuous Emission Monitors (CEMS) and Monitoring

A. The combustion turbines shall be equipped with continuous emission monitoring equipment for nitrogen oxides, carbon monoxide, ammonia, and diluent gas (oxygen or carbon dioxide).

B. The continuous monitors must satisfy the applicable performance specifications in 40 CFR Part 60, Appendices B&F, Part 75, Appendices A&B, and Chapter 117 of the MEDEP regulations.

C. Performance specifications, monitor location, calibration and operating procedures and quality assurance procedures for each monitor must be submitted to the Bureau of Air Quality for review and approval at least 180 days prior to expected start-up.

D. The Maine Independence Station facility shall notify the Bureau of Air Quality in writing of the date on which the initial performance testing of the CEMS begins at least 30 days prior to such a date.

E. All data shall be monitored and recorded continuously, in accordance with Chapter 117 of the MEDEP regulations.

F. The Maine Independence Station facility shall maintain records for each gas turbine for:

i. Hours of operation, including startup, shutdown, and any other down time:
ii. Malfunctions of the air pollution control system; and
iii. Quantities of natural gas delivered to the facility on a monthly basis.

G. In the event that the Maine Independence Station facility uses a split scale NOx CEMS with a lower scale at 1-10 ppm and an upper scale at approximately 10-250 ppm, the Maine Independence Station facility shall be permitted to modify the calibration method in 40 CFR Part 60, Appendix B & F in order to calibrate their NOx CEMS across two scales, with only one point required to be calibrated in the lower end scale.

(20) #1 and #2 Turbine Startup/ Shutdown, Initial Commissioning

A. The Maine Independence Station facility shall minimize emissions from the gas turbines to the maximum extent practicable during startup and shutdown, under maintenance or adjustment conditions, during equipment cleaning conditions, and during initial gas turbine commissioning by following proper operating procedures to minimize the emission of air contaminants to the maximum extent practical.

1. Turbine startup/shutdown shall be defined as that period of time from initiation of combustion turbine firing until the unit reaches steady state load operation. Steady state operation shall be reached when the combustion turbine reaches minimum load (60%) and the steam turbine is declared available for load changes. This period shall not exceed 60 minutes for a hot start, 180 minutes for a warm start, nor 240 minutes for a cold start. A hot start shall be defined as startup when the generating unit has been down for less than 2 hours. A warm start shall be defined as startup when the generating unit has been down for more for more than 2 hours and less than or equal to 48 hours. A cold start shall be defined as startup when the generating unit has been down for more than 48 hours. Unit shutdown shall be defined as that period of time from steady state operation to cessation of combustion turbine firing. This period shall not exceed 60 minutes.

2. Initial turbine commissioning shall be defined as the period of time from initial turbine startup to the date of the initial performance test, but not later than 180 days after the initial startup.

3. The emission limitations of Condition (17)(F) shall apply at all times, except during initial turbine commissioning and turbine startup/shutdown conditions. Startup/shutdown exemptions shall apply for the period of time from the turbine's first fire to twelve months from the initial performance test. Within twelve months from the initial performance

testing required by Condition (25) the owner/operator shall propose to the Bureau of Air Quality, numerical emission limits to apply during turbine startup and shutdown conditions. Continuous emission monitoring, stack test data gathered during startups and shutdowns, and/or other data acceptable to the MEDEP shall be used as the basis for these limits.

(21) Cooling Tower

A. The Maine Independence Station facility shall use drift eliminators in the cooling tower to reduce drift and resulting particulate matter emissions.

(22) Acid Rain Requirements

A. The Maine Independence Station facility shall comply with the applicable Federal acid rain program requirements codified in 40 CFR Parts 72, 73, 75, 77, and 78.

B. The Maine Independence Station facility shall apply for a permit pursuant to 40 CFR, Part 72, as a Phase II Acid Rain facility. If practical to do so, the application shall be submitted twenty-four (24) months before commencing operations; a copy of the permit application shall be sent to the EPA when filing to the DEP. In the event that an application is not submitted 24 months before commencing operations, the application should be submitted as soon as possible, and should include a letter explaining why the application was not submitted 24 months in advance of commercial operation.

C. The Maine Independence Station facility shall obtain and hold in the EPA allowance Management System, sufficient Acid Rain allowances for each ton of SO_2 emitted annually in accordance with the requirements of 40 CFR, Part 72, 73, 75, 77, and 78.

(23) Each gas turbine system is subject to and shall comply with the requirements of the Federal New Source Performance Standards 40 CFR Part 60, Subparts A (General provisions), and Subpart GG (Stationary Gas Turbines).

A. The Maine Independence Station facility shall comply with the notification and recordkeeping requirements of 40 CFR Part 60.7.

B. The Maine Independence Station facility shall monitor the fuel-bound sulfur content of the natural gas as described in 40 CFR, Part 60, Subpart GG or by a frequency as approved by EPA.

(24) The Maine Independence Station facility shall comply with the Federal Accidental Release Program requirements (for ammonia) codified in 40 CFR Part 68, as applicable.

(25) Performance Tests

A. The Maine Independence Station facility shall conduct the following initial performance tests within 60 days after achieving the maximum production rate at which the plant will be operated but not later than 180 days after the initial startup. All testing shall comply with all of the requirements of the DEP Compliance Test Protocol and with 40 CFR Part 60, as appropriate, or other methods approved by the Bureau of Air Quality. A representative of the DEP or Environmental Protection Agency (EPA) shall be given the opportunity to observe the compliance testing.

B. The Maine Independence Station facility shall install test ports in stacks #1 and #2, in accordance with the criteria of 40 CFR 60, Appendix A, Method 1, and test platforms, if necessary, to allow emission compliance testing for the Gas Turbine System.

C. The Maine Independence Station facility shall conduct initial performance testing on each gas turbine for nitrogen oxides, carbon monoxide, particulate matter (total and PM_{10}), volatile organic compounds, and ammonia. Test results shall be reported in the applicable units of the standard.

(26) Standby Generator and Fire Pump

A. Operation of the standby generator shall be limited to 500 hours per year. Operation of the fire pump shall be limited to 500 hours per year.

B. To document compliance the Maine Independence Station facility shall maintain hour meters on the standby generator and fire pump and shall keep a written log of all operating hours.

C. Diesel fuel utilized shall be limited to a sulfur content of 0.05% by weight, demonstrated by purchase records from the supplier.

D. Emissions from the standby generator and fire pump shall not exceed the following:

Power Source	**Fire Pump**	**Fire Pump**	**Standby Generator**	**Standby Generator**
Pollutant	lb/MMBtu	lb/hr	lb/MMBtu	lb/hr
PM	0.12	0.42	0.12	0.47

PM_{10}	0.12	0.42	0.12	0.47
SO_2	-	0.2	-	0.2
NO_X	-	15	-	17
CO	-	3.3	-	3.6
VOC	-	1.2	-	1.3

Compliance with the above emission limits applicable to the standby generator and fire pump shall be demonstrated by fuel receipts and stack testing in accordance with 40 CFR Part 60, Appendix A, when requested by the Bureau of Air Quality.

E. Visible emissions from each unit shall not exceed 30% opacity except for 15 minutes in any continuous 3-hour period. Compliance with the visible emission limitation shall be demonstrated in accordance with 40 CFR Part 60, Appendix A, Method 9, when requested by the Bureau of Air Quality.

(27) For Compliance Assurance, the Maine Independence Station facility shall comply with the following:

A. Quarterly Reporting
   1. The licensee shall submit a Quarterly Report to the Bureau of Air Quality within 30 days after the end of each calendar quarter, detailing the following, for the Control Equipment, Parameter Monitors, Continuous Emission Monitoring Systems (CEMS) required by this license:
      a. All control equipment downtimes and malfunctions;
      b. All CEMS downtimes and malfunctions;
      c. All downtimes of the above specified parameter monitors;
      d. All excess events of emission and operational limitations set by this Order, statute, state or federal regulation, as appropriate; and
      e. A report certifying there were no excess emissions, if that is the case.

   2. The following information shall be reported for each excess event:
      a. Standard exceeded;
      b. Date, time, and duration of excess event;
      c. Maximum and average values of the excess event, reported in the units of the applicable standard, and copies of pertinent strip charts and print-outs when requested;
      d. A description of what caused the excess event;
      e. The strategy employed to minimize the excess event; and
      f. The strategy employed to prevent reoccurrence.

B. Record-Keeping

1. For all of the equipment parameter monitoring and recording, required by this license, the licensee shall maintain records of the most current six year period and the records shall include:

   a. Documentation which shows monitor operational status during all source operating time, including specifics for calibration and audits; and

   b. A complete data set of all monitored parameters as specified in this license. All parameter records shall be made available to the Bureau of Air Quality upon request.

2. The CEMS required by this license shall be the primary means of demonstrating compliance with emission standards set by this Order, statute, state or federal regulation, as applicable. For all CEMS, the licensee shall maintain records of the most current six year period and the records shall include:

   a. Documentation that all CEMS are continuously accurate, reliable and operated in accordance with Chapter 117, 40 CFR Part 51, Appendix P, and 40 CFR Part 60, Appendices B and F;

   b. Records of all measurements, performance evaluations, calibration checks, and maintenance or adjustments for each CEMS; and

   c. Upon the written request by the Department, a report or other data indicative of compliance with the applicable emission standard for those periods when the CEMS were not in operation or produced invalid data. Evidence indicating normal operations shall constitute such reports or other data indicative of compliance with applicable emission standards. In the event the Bureau of Air Quality does not concur with the licensee's compliance determination, the licensee shall, upon the Bureau of Air Quality's request, provide additional data, and shall have the burden of demonstrating that the data is indicative of compliance with the applicable standard.

C. Stack Testing

1. The licensee shall conduct emission testing, and demonstrate compliance with the applicable standard within 60 days after receipt of notice from the Bureau of Air Quality:

2. All testing programs shall comply with all of the requirements of the DEP Compliance Test Protocol and with 40 CFR Part 60, as appropriate, or other methods approved by the Bureau of Air Quality.

(28) The licensee shall maintain records of all deviations from license requirements. Such deviations shall include, but are not limited to malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next working day, whichever is later, of such occasions and shall report the probable cause, corrective action, and any excess emissions in the units of the applicable emission limitation.

(29) The Maine Independence Station facility shall submit an application for a Title V Part 70 license under Chapter 140 of the MEDEP regulations within 12 months after commencing operations.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 1998.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
EDWARD O. SULLIVAN, COMMISSIONER

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application February 17, 1998
Date of application acceptance February 17, 1998

Date filed with the Board of Environmental Protection _____

This Order prepared by Sarah R. Anderson, Bureau of Air Quality